Analytical Deliberation on Sustainable Development

New York State Bar Association Speech
(transcript)

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There is a very warm glow at the dais, I can tell you, sitting between the champions of new legislation, Republican and Democrat, Senate and House. It's extremely exciting. I was also quite taken with the coincidence that I share with the Assemblyman DiNapoli: we both let our parents down, I guess, in not quite making it to law, but we ended up at the dais anyway. For me, being here is really a special honor and privilege and brings personal gratification. My father, who passed away a couple of years ago, was president of the labor law section of the Michigan Bar Association and a long-time constitutional lawyer and labor lawyer in Michigan. He taught me a lot about the role of law in our society and in the public service. Public service is exactly what you do; you make our physical environment and our social environment livable and I'm really grateful to be a part of your event today.

I wanted to introduce you to the Earth Institute at Columbia University so that we can become even more closely aligned as colleagues and as joint activists for a sustainable environment for New York and for the world. I've already seen that there is tremendous expertise and engagement here, and I'm delighted that many people are working not only on issues of the city and state, but also on all sorts of international issues. This is the unparalleled model of engagement in New York City and New York State. As a new arrival to this city after 30 years in Boston, I find the energy,

commitment, activism and engagement is simply beyond compare and it's fabulous to be part of it.

The Earth Institute is a special initiative of Columbia University. We are working on an extraordinary range of issues and taking on some easy problems (like trying to end global poverty in the next 15 years) and some harder ones (like New York City waste disposal, which I've been warned is impossible!). I do think we can make a major dent in global poverty, and the way we want to do it resonates with Senator Marcellino and Assemblyman DiNapoli's lessons about consensus and balance, both of which are extremely critical to the way that we at the Earth Institute want to approach problems with you. The issues at the interface of our economy, our society and the physical environment are fundamental, extraordinary, diverse, bewildering, and amazing. As I was thinking about sharing some of the aspects of the Earth Institute with you, I thought that maybe going through today's activities could give you a sense of the range of issues that one has to grapple with in thinking about global sustainable development.

The day began with a conference call of our U.N. colleagues to discuss the problems of rural African agriculture. We are preparing for a trip to examine the international system's failure to relieve the plight of hundreds of millions of impoverished African households. These are farming families that are chronically hungry and dying of disease due to inadequate nutrition and the resulting immuno-suppression. Meanwhile, they are trying to grow crops on soils that are depleted of nutrients, and to live off ecosystems that don't function, like forests that have been cut down, rivers that are no longer running, and underground aquifers that are becoming

depleted. Obviously this is an environmental challenge that is not one of convenience, but one of life and death.

The next meeting this morning was with a major American auto company and our scientists working on the issues of long-term climate change, which, of course, many of you are engaged in. As I'll discuss in a moment, we're trying to find ways to achieve consensus and balance between an economy that depends fundamentally on energy, and a climate that is being fundamentally deranged by our current energy system. This is not an issue that is just going to go away and it cannot just be written-off as the Wall Street Journal editorial page tries to when it labels it a 'pseudo-science.' We have, I think, the world's leading scientists on this issue at the Earth Institute at Columbia University, from the Goddard Institute of Space Studies at Broadway and 113th – NASA's only urban-based research center – to the Lamont-Doherty Earth Observatory. My colleague, Professor Wally Broecker, who is a globally-renowned earth scientist, tells us every day that we are "poking the beast." The climate is an unpredictable system, and we're pushing on it right now with the fossil fuel emissions. We're pretending that this problem will just go away or that any effects will be gradual enough to handle. And yet, the chance of extreme disruptions, Professor Broecker tells us, are not only real but absolutely evident in the historical record – a record that he, perhaps more than any other scientist, has helped to uncover. This week's *Science Magazine* looked at the question of last summer's European heat wave and said that there are basically two views about it. The first is that it was just a very unlucky, random weather event, which they calculated would happen about once every 9,000 years. The second view argues that this presages the kind of changes that are underway right now, and by the climate model, this view is a

more likely correct. The fact that we had a major auto industry company in the room this morning actually shows, despite the attempts of our government and some editorial writers to look the other way, that there are realities that the leading companies are facing and that will certainly confront all of us in constructing a legal environment which can address this reality.

The next meeting (there are a lot of them because there are a lot of problems!) was about the Amazon basin. I had been asked by one of the leading foundations in the United States working on the Amazon to look at a problem of one of the last two major, still-contiguous rainforest environments in the world, a vast, unique, completely irreplaceable treasure of biodiversity and climate-stabilization, but one that's being challenged by what's called the 'arc of deforestation' – a massive wave of cattle ranching, soybean growing, illegal logging and squatter settlements. That moving boundary has taken an estimated 16% of the rainforest so far, but at an accelerating rate, especially with a booming Asian economy that will demand more soybeans for human and cattle consumption.

Then we moved on to the question of malaria in Africa, again an environmental issue as much as a public health issue. The so-called 'septic fringe' of African cities – areas without proper waste management or river shed management to keep waters flowing – provides breeding sites for anopheles mosquitoes. Together with the tragic breakdown of the public health systems and rising drug resistance, there has been a resurgence of this long-time killer, and we're probably up to one billion malaria cases per year now in Africa – one billion! These one billion clinical episodes, resulting in probably 3 million deaths per year, are of a disease that is preventable and treatable.

However, we're not doing anything to help, and the international community's neglect is leading to the mass death of children in impoverished countries. When traveling with my wife, a pediatrician, we see children in hospitals dying of easily treatable conditions, but where drugs aren't available or there isn't a road for parents to bring children to the district hospital, so the parents have to walk a day or two days and by that time the child is in a coma. This is another one of these environmental, poverty, economy, and public health challenges that is huge, unmatched, and growing.

Later today,I will go to a meeting with the President of Iceland at the Explorer's Club, to talk about the dramatic changes in the polar climate and the ideas that some of my colleagues have to focus international scientific attention on the massive changes that are likely coming from man-made long-term climate change. Of course, we are very cognizant of being Columbia University in the city of New York, and we take that extremely seriously. That's why we are committed to being your partners in understanding the local challenges, like asthma in the city and its public health consequences, or how the Hudson River is changing (and we're proud to be a part of Governor Pataki's initiative on the Hudson River) as one of the leading research centers on how climate change will affect the New York City region. Cynthia Rosenzweig of the Earth Institute's Goddard Institute of Space Studies is probably the world's leading researcher in downscaling global projections so that we can get a sense of what they might mean for us in the next 25 or 50 years. Meanwhile, Wally Broecker keeps telling us that we don't know if change will come in 25 years or in 50 years, and we don't know if it will be gradual or if it's going to be abrupt, and we'd better be doing something about it.

Now how are we proposing to do something about it? There really are two parts to our strategy and why it's so important for us to work together with you.

First, our special role as a university is to mobilize science so that we can understand these issues in depth, without bias or special interests. These are issues where the science doesn't lie in one narrow field, but is instead a complex mix of environment, earth science, economy, public health, ecology, etc. The university did something quite extraordinary before my arrival, from which I am benefiting enormously as the new Director of the Earth Institute. Columbia made a major commitment, which universities typically do not do, to pull across many different faculties and invest in bringing together disparate parts of the university to work on the challenge of sustainable development. We bring together the earth sciences, the climate sciences (ocean and atmospheric sciences), the basic earth processes sciences, the environmental engineers (including hydrologists, civil engineers, energy scientists working on ingenious solutions to a lot of these issues, including the carbon issue), the ecologists and environmental biologists (in partnership with remarkable institutions of New York City: The New York Botanical Gardens, the Wildlife Conservation Society, the American Natural History Museum, and the Wildlife Trust, in a consortium that we call the Center for Environmental Research and Conservation, of which Jim Periconi has been a very active associate and wonderful friend). Finally, we include public health and health sciences because every one of these issues is a matter of health as well as environment and economics, and both the College of Physicians and Surgeons and the Mailman School of Public Health are actively engaged in helping to figure out how to bring some basic health care to the millions of people that are dying every year. We estimate that 22,000 will die today of diseases that

are completely preventable or treatable: AIDS, tuberculosis, malaria, diarrhea, respiratory infection. Yet the lack of a health system allows for mass suffering, and we're trying to address that very practical problem. Finally, we bring in the public policy schools: the Law School, the Business School, and the School of International and Public Affairs. That's quite a package, and what's remarkable is the phenomenal outpouring of student interest in studying the world. The idea of sustainable development is not some abstract notion; it is the challenge that we are going to have to face to figure out how we can live peacefully, prosperously, and sustainably with a population growing past 8 billion, in a changing climate, with ecosystems under tremendous stress, and with changes that we can't even properly anticipate.

So the first part is to get the science mobilized and to work together to understand that the traditional boundaries of academic disciplines don't apply to the challenges we face. The second part of our strategy is to bring science into public discussion in a serious way. I believe that if reasonable people of goodwill, even if they have very different interests, can deliberate on the basis of knowledge and rationality, then we can find our way through this. It's not easy. It takes the skills of great politicians to make this happen. There is a process that I truly love and I want to champion at the Earth Institute and which *Science Magazine* recently called 'analytical deliberation.' The idea is to get people from across sides the table that don't like each other very much or don't talk to each other very often, engaged in a rational, science-based ongoing discussion so that we can find our way through these problems. I am hopeful because I've seen this kind of fact-based analytical deliberation work in the past. If we're serious about it, it can help us find a way through enormous challenges. In the area of climate change, for

example, we really do have a hard problem at hand. We're changing the climate dramatically and unpredictably, and we in the United States are doing about 25% of the change. Even worse, the carbon doesn't just sit over us; it mixes uniformly in the global atmosphere and changes the whole planet, and while it will have big effects on us, it will have even bigger effects on the poorest people in the world. The tropical regions, the places depending on rainfall to survive, may find themselves in prolonged droughts and facing massive death. Nothing short of that. There have been a couple of approaches: one is to ignore this issue and claim it is too hard to handle. Unfortunately, this country's leading business newspaper has taken that view on its editorial page and I think it's extremely dangerous for our society that we're pretending this great challenge doesn't even exist. When President Bush came to office (no doubt he's an avid reader of the Wall Street Journal), the first thing he did was to ask the National Academy of Sciences to dismiss that junk that was coming from the U.N. Intergovernmental Panel on Climate Change and to tell us how that politicized, overwrought, hyperbolic set of third-world ecologists is misleading and trying to wreck our economy. Of course, the National Academy came back in 6 weeks and said, "Mr. President the IPCC is absolutely right." That was the last we heard of it, though. The fact is that we have a real problem. My view is that if people better understood the challenges and options that we face, we wouldn't be having what seems to many as a head-on conflict between those who say we need to put the sack cloth on now and wreck our economies and those who say we should do nothing. Our scientists are trying to show how science and technology, if invested in thoughtfully and properly, can actually provide solutions not just for us, but also for the world's poor at reasonable cost and at enormous prudence for our investment.

The climate change discussion that I was in this morning was with our leading energy engineer and physicist, Professor Klaus Lackner, a man who has taught me that the whole world can be understood, if you look at it the right way, through the second law of thermodynamics. Over the past ten years, Klaus has championed an increasingly-recognized idea allowing us to meet future energy needs with fossil fuels, since they are the cheapest and most easily available. His idea allows us to do it without threatening the environment by capturing the carbon that is emitted in fossil fuel burning. It's called 'carbon sequestration' and he developed it with colleagues, first at Los Alamos Research Laboratories and now at Columbia University, using various ingenious technological solutions including what's called 'geological' or 'chemical capture' of the carbon and 'chemical sequestration' of the carbon. The point is when he laid out the main ideas this morning to one of the auto companies' senior executive teams, they sat back and said, "Wow! If this can work, it is really, of course, one of the most important things that we need to do." Making this work means investing in this using public science and public engineering, and working together with our Chinese and Indian colleagues, not just to pretend, but from a point of view of analytical deliberation. Instead of having Washington politicians running from the problem to cater to West Virginia, they should realize that with carbon sequestration, coal can become one of the great clean fuels of the 21st century.

I want to close by saying that we want to be your partners in thinking about these issues. We will be engaging in many different ways in an active process of analytical deliberation. I think New York City is the unique place in the world where we can have this conversation, and where through the United Nations we can engage the whole world.

By engaging our leaders in industry, politics, media, and science, we can really make a difference. The Earth Institute would love to work with the Environmental Law section of the New York State Bar in making that difference.